

Notice of Allowability

Application No.

10/608,625

Examiner

Yong D. Pak

Applicant(s)

ASAKO ET AL

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on April 17, 2006.
2. ☒ The allowed claim(s) is/are 1, 12-14 and 21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

The amendment filed on April 17, 2006, amending claims 1, 12-14, 21 and 23-24 and canceling claims 2-11, has been entered.

Claims 1 and 12-33 are pending. Claims 15-20, 22 and 25-33 are withdrawn. Claims 1, 12-14, 21 and 23-24 are under consideration.

Response to Arguments

Applicant's amendment and arguments filed on April 17, 2006, have been fully considered and are deemed to be persuasive to overcome the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Callahan on July 10, 2006.

The application has been amended as follows:

IN THE CLAIMS:

Replace claims 1, 12-14 and 21 with the following claims:

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--1. An isolated β -keto acid reductase comprising the amino acid sequence of SEQ ID NO:1 except that:

(a) the amino acid at amino acid position 54 is substituted with glutamine, glycine, serine, threonine, cysteine, asparagine, alanine valine, isoleucine, methionine, lysine, arginine, aspartic acid, glutamic acid, tyrosine, proline or histidine;

the amino acid at amino acid position 245 is substituted with arginine or another amino acid; and

the amino acid at position 271 is substituted with asparagine or another acid;

(b) the amino acid at amino acid position 104 is substituted with cysteine;

the amino acid at amino acid position 245 is substituted with arginine or another amino acid; and

the amino acid at position 271 is substituted with asparagine or another acid; or

(c) the amino acid at amino acid position 54 is substituted with glutamine, glycine, serine, threonine, cysteine, asparagine, alanine valine, isoleucine, methionine, lysine, arginine, aspartic acid, glutamic acid, tyrosine, proline or histidine;

the amino acid at amino acid position 104 is substituted with cysteine;

the amino acid at amino acid position 245 is substituted with arginine or another amino acid; and

the amino acid at position 271 is substituted with asparagine or another acid.--

--12. The reductase according to claim 1, wherein the amino acid at position 245 is substituted with arginine.--

--13. The reductase according to claim 1, wherein the amino acid at position 271 is substituted with aspartic acid.--

--14. The reductase according to claim 1, wherein

- (a) the amino acid at amino acid position 54 is substituted with glutamine and the amino acid at amino acid position 104 is substituted with cysteine;
- (b) the amino acid at amino acid position 54 is substituted with glutamine, the amino acid at amino acid position 104 is substituted with cysteine and the amino acid at amino acid position 271 is substituted with aspartic acid;
- (c) the amino acid at amino acid position 54 is substituted with glutamine, the amino acid at amino acid position 104 is substituted with cysteine, the amino acid at amino acid position 245 is substituted with arginine and the amino acid at amino acid position 271 is substituted with aspartic acid;
- (d) the amino acid at amino acid position 54 is substituted with glutamine and the amino acid at amino acid position 245 is substituted with arginine;
- (e) the amino acid at amino acid position 54 is substituted with glutamine, the amino acid at amino acid position 245 is substituted with arginine and the amino acid at amino acid position 271 is substituted with aspartic acid; or
- (f) the amino acid at amino acid position 54 is substituted with glutamine and the amino acid at amino acid position 271 is substituted with aspartic acid.--

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--21. A method for modifying a β -keto acid reductase, which consists of substituting one of the amino acid at positions 54 or 104 of the amino acid sequence of SEQ ID NO:1 with another amino acid or substituting both the amino acids at amino acid positions 54 and 104 of the amino acid sequence of SEQ ID NO:1 with another amino acid, wherein

the amino acid at amino acid position 54 is substituted with glutamine, glycine, serine, threonine, cysteine, asparagine, alanine valine, isoleucine, methionine, lysine, arginine, aspartic acid, glutamic acid, tyrosine, proline or histidine; and

the amino acid at amino acid position 104 is substituted with cysteine;
and wherein the modified β -keto acid reductase continues to have β -keto acid reductase activity. —

Cancel claims 15-20 and 22-33.

Allowable Subject Matter

Claims 1, 12-14 and 21 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

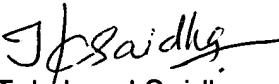
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Pak whose telephone number is 571-272-0935. The examiner can normally be reached 6:30 A.M. to 5:00 P.M. Monday through Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on 571-272-0928. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Yong D. Pak
Patent Examiner 1652


Tekchand Saidha
Primary Patent Examiner 1652